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B&J Drop Box Sanitary Landfill
6426 Hay Road
Vacaville, California 95687

ATTN: Mr. Tim Daleiden

RE: DESIGN REPORT AND CONSTRUCTION DOCUMENTS
B&J DROP BOX SANITARY LANDFILL
SOLANO COUNTY, CALIFORNIA

Golder Associates Inc. (Golder) is pleased to submit this design report and construction documents for the construction of Disposal Modules (DM) 9 and 11 at the B&J Drop Box Sanitary Landfill in Solano County California. B&J Drop Box, Inc., a subsidiary of Norcal Waste Systems, owns and operates the B&J Landfill as a Class II and Class III solid waste disposal facility. This report presents the grading and base liner design for Design Modules (DM) 9 and DM-11. DM-9 and DM-11 are designed as Class II disposal units and generally conform to the conceptual expansion design that was prepared by Geosyntec (1995) and approved by the Central Valley Regional Water Quality Control Board. The base liner for DM-9 and DM-11 and the side-slope liner over existing DM-2.1 have been modified as described in the Report of Waste Discharge (ROWD) prepared by Golder dated March 21, 1997. Figure 1 shows the locations of DM-9 and DM-11.

1. FINAL BASE GRADING

The grading plans for DM-9 and DM-11 generally conform to the conceptual design developed by Geosyntec (1995). The design includes minor modifications to the lateral extent and base grades as a result of the incorporation of two sumps within each module footprint. The original conceptual design only included a single sump within each module. The incorporation of multiple sumps provides redundancy and increased efficiency in the leachate collection and removal system (LCRS).

Grading for DM-9 and DM-11 will involve excavation or backfilling to the design grades as shown on Drawings 3 and 4 of the Construction Plans. The final base grades maintain a minimum two percent slope on the floor areas. These grades were designed to provide for positive drainage and to provide a firm, stable foundation for the containment system. An allowance for the estimated total subgrade settlement, under

loads resulting from the final waste fill height and cover, has been accounted for in the proposed grades (Geosyntec, 1995).

The interior slopes of the perimeter levees will be graded to 2H:1V with a crest elevation maintained at 40 feet mean sea level (msl). Construction of DM-11 will include lining over the existing refuse slopes of DM-2.1 up to an elevation of approximately 70 feet msl. Approximately one foot of compacted fill will be placed on the existing DM-2.1 interim cover (approximately one foot thick) to provide a two foot thick foundation layer for the containment system.

The minimum elevation of the containment systems is based on the maximum anticipated groundwater elevation. This maximum elevation is estimated to be approximately 22.5 feet msl for both DM-9 and DM-11 (Geosyntec, 1995).

As shown in Figure 1, the proposed construction that will be completed during 1997 will only include a portion of DM-9 and DM-11. The construction of DM-9 during 1997 (DM-9.1) represents approximately 6.9 acres of the full 18.9 acre DM-9 footprint. Similarly, the portion of DM-11 that will be constructed during 1997 (DM-11.1) represents approximately 8.8 acres of the full 12.9 acre DM-11 footprint.

2. CONTAINMENT SYSTEM CONFIGURATION

The containment system for the B&J Landfill, including DM-9 and DM-11, meets or exceeds the state standards provided in Titles 14 and 23 of the California Code of Regulations and federal standards provided in Title 40 of the Federal Code of Regulations (Subtitle D). The containment system generally conforms to the original design report (Geosyntec, 1995) with modifications to the floor liner and side-slope liner over existing waste as described in the Report of Waste Discharge (ROWD) prepared by Golder (March 21, 1997).

The proposed floor liner system consists of the following components from top to bottom:

- 12-inches of Operations Layer
- 8-oz. Geotextile Filter Layer
- 6-inches of LCRS gravel (3/8-inch minus)
- 60-mil HDPE Geomembrane
- GCL with 30-mil HDPE Geomembrane Backing
- 12-inches of Low-Permeability Soil (1×10^{-7} cm/s or less)
- 6-inches of Foundation Soil
- 6-inches of Capillary Break Gravel
- Subgrade

The above containment system requires that the LCRS gravel be comprised of a subrounded pea-gravel with a maximum particle size of 3/8-inch. The design incorporates provisions to include an 8-oz geotextile cushion layer directly above the

geomembrane if the LCRS gravel is coarser or more angular than required by the specifications.

For the perimeter levee, the containment system consists of the following components from top to bottom:

- 18-inches of Operations Layer
- 16-oz. Geotextile Cushion Layer
- 60-mil HDPE Geomembrane
- GCL with 30-mil HDPE Geomembrane Backing
- Geocomposite Capillary Break Layer
- Subgrade

For the DM 2.1 side-slope, the ROWD (Golder, 1997) includes the following containment system:

- 18-inches of Operations Layer
- 60-mil HDPE Geomembrane
- Two feet of Soil Foundation

The DM-2.1 side-slope containment system was designed considering the existing composite base liner containment system that underlies DM-2.1. This containment system meets or exceeds the State requirements provided in Titles 14 and 23 of the California Code of Regulations. The perimeter portion of DM 2.1, which includes the area immediately adjacent to DM-11, was certified to meet or exceed Subtitle D requirements.

3. FILL PLAN

Figures 2 and 3 present interim waste fill plans for DM-9 and DM-11, respectively. The slopes have been designed to be consistent with the final grading plan (EMCON, 1993) and include final slopes that are inclined at 4H:1V (Horizontal to Vertical). Temporary (interim) refuse slopes are inclined at 3H:1V.

Slope stability analyses were completed to verify stability of the proposed interim fill slopes for DM-9 and DM-11. The stability analyses were completed using a two-dimensional limit equilibrium method of slices with the aid of computer program XSTABL (v. 5.101). The stability analyses considered a potential failure surface extending along the base and side-slope liner system and a potential bi-linear failure plane extending along the base liner and then upward through the waste materials.

The shear strength of Class II municipal refuse was assumed to correspond to an internal frictional angle of 30 degrees and a cohesion of 200 psf. These strength parameters are within the range of refuse strengths recommended by Singh and Murphy (1990). In addition, a shear strength corresponding to a friction angle of 30

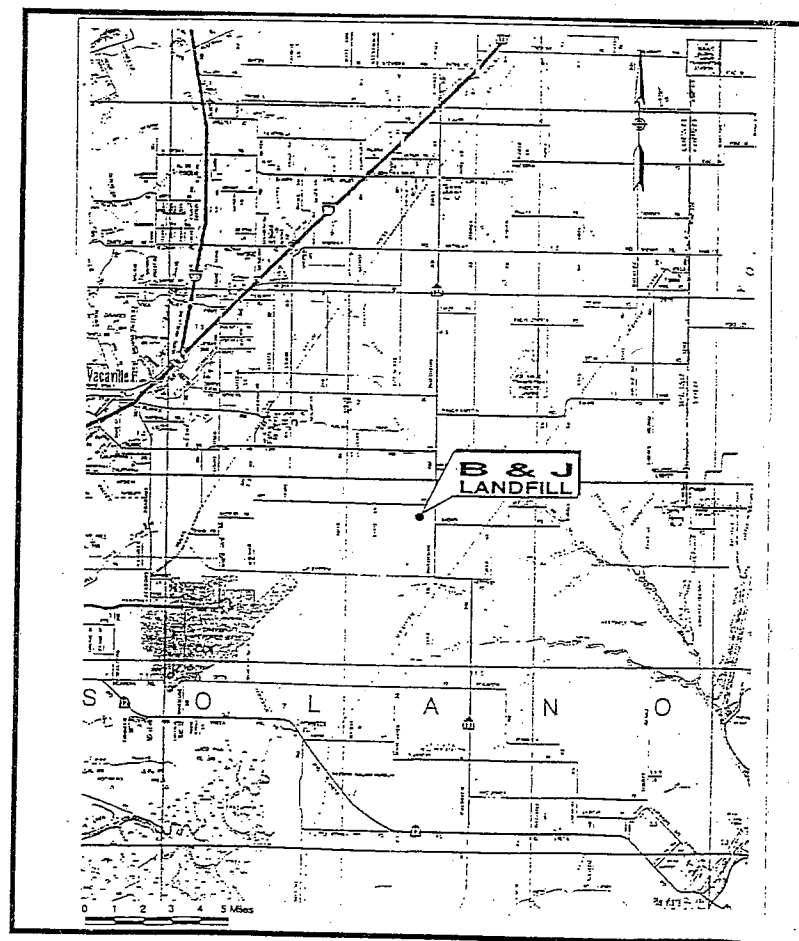
CONSTRUCTION DRAWINGS

B&J DROP BOX CORPORATION SANITARY LANDFILL DISPOSAL MODULES 9.1 AND 11.1

SOLANO COUNTY, CALIFORNIA



LOCATION MAP



DRAWING NO.	TITLE
1	COVER SHEET
2	SITE PLAN
3	DISPOSAL MODULE 11.1 SUBGRADE PLAN
4	DISPOSAL MODULE 9.1 SUBGRADE PLAN
5	CROSS-SECTIONS
6	SUMP PLAN AND DETAILS
7	CONTAINMENT SYSTEM DETAILS
8	CONTAINMENT SYSTEM DETAILS
9	DM-9 ACCESS ROAD AND PROFILE STA 0+00 TO 10+00
10	DM-9 ACCESS ROAD AND PROFILE STA 10+00 TO 18+07



PREPARED BY:



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MARCH 1997

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